

UNITED STATES PATENT OFFICE.

JOHN HERBERT HUNTER, OF THE UNITED STATES ARMY.

PROCESS OF CONVERTING PROPELLENT POWDERS INTO DETONATING EXPLOSIVES.

1,382,287.

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No Drawing.

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To all whom it may concern:

Be it known that I, JOHN HERBERT HUNTER, major, Ordnance Dept., U. S. A., a citizen of the United States, stationed at Washington, D. C., have invented an Improvement in Processes of Converting Propellant Powders into Detonating Explosives, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment of any royalty thereon.

The subject of this invention is a process of converting propellant powders into detonating explosives.

Because of the fact that there are at times large quantities of propellant powder on hand, which powder is liable to deterioration if stored for any great length of time, it is desirable that such powder be converted to other uses.

The principal use which could be made of such explosive would be for blasting or demolition purposes.

Attempts have been made to use smokeless powder as a demolition or blasting agent, but no practical success has been attained from such attempts, and no applications of economic importance have been made of the well known detonating properties of propellant powders.

I have discovered that if a propellant powder, such as, for example, the multi-perforated nitro-cellulose smokeless powders commonly used in various guns in this country, be ground to a suitable degree of fineness, very desirable blasting explosives may be obtained.

By suitably regulating the degree of fineness to which the powder is ground, blasting explosives having varying degrees of power will be produced.

As an example of the way in which my process may be employed, the following is submitted.

The powder is ground in any convenient mill and the pulverized material is screened through suitable sieves. I prefer to separate the powder having the following degrees of fineness.

Portion "A" that which passes through an 80-mesh sieve.

Portion "B" that which passes through a 50-mesh sieve and is held on an 80-mesh sieve.

Portion "C" that which passes through a 20-mesh sieve and is held on a 50-mesh sieve.

Portion "D" that which passes through an 8-mesh sieve and is held on a 20-mesh sieve.

I find that these powders, when packed in ordinary dynamite cartridges and detonated by means of a number 6 or number 8 blasting cap, have varying rates of detonation which make the powders comparable in their execution to the common grades of dynamite, from say 70% to 25% strength.

It is not my desire to restrict the scope of my invention to the use of nitrocellulose smokeless powder inasmuch as my invention works equally well with such other propellant powders as cordite, ballistic, etc.

It is to be understood that I am not limiting myself to the granulations quoted above, inasmuch as other granulations can be used in order to obtain explosives of intermediate or similar power.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. A process for converting propellant powders into detonating explosives consisting in passing pulverized powder through screens having mesh of varying degrees of fineness to secure blasting powders of varying strength.

2. The process of converting propellant powders into detonating explosives consisting in pulverizing and separating the pulverized powder according to the degree of pulverization.

3. The process of converting propellant powders into detonating explosives consisting in pulverizing and grading the pulverized powder according to fineness of pulverization and packing the pulverized powder in dynamite cartridges.

4. As a new article of manufacture a detonating explosive consisting of graded pulverized propellant powder.

JOHN HERBERT HUNTER.